

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kenneth Allen (Reg# 27,301) on 4/30/2009.

The application has been amended as follows:

Claim 1:

An image processing system adapted to process image frames and comprising:

an image processing engine operative to perform object-independent processing corresponding to a first layer of the image processing system, said object independent processing being performed on a per-frame basis on source data from integral registers of said image processing engine and captured on a per-frame basis in said integral registers of said image processing engine without access to external memory for storage of image data in order to avoid memory bandwidth limits to generate a first set of processed data, said image processing engine further comprising a plurality of parallel processors, each said parallel processor associated with only a single different one of pixels of an image frame; and

a post processing engine operative to directly receive the first set of processed data and to perform object-dependent processing corresponding to a second

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processing layer of the image processing system on the received first set of processed data thereby to generate a second set of processed data, said post processing engine further comprising an N-way symmetric multi-processing system (SMP) having disposed therein N discrete Fourier transform (DFT) engines and N matrix multiplication engines; wherein N is an integer greater than 1.

Claim 9:

A method for processing images in an image processing system for performing object-independent processing corresponding to a first image processing layer, said first image processing layer being limited to one pixel per processor, pixel- related object independent data, said object independent processing being performed on a per- frame basis on source data from integral registers of an image processing engine and captured on a per-frame basis in said integral registers of said image processing engine without access to external memory for storage of image data in order to avoid memory bandwidth limits to generate a first set of processed data; supplying the first set of processed data from said integral registers directly to a second processing layer; performing object-dependent processing corresponding to the second processing layer on the received first set of processed data thereby to generate a second set of processed data; and

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in a post processing engine using an N-way symmetric multi-processing system (SMP) having disposed therein N discrete Fourier transform (DFT) engines and N matrix multiplication engines; wherein N is an integer greater than 1.

Reason for Allowance

2. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, and similarly claim 9, closet art of record do not discloses all limitation. Specifically,

- Juvinal (US 5,214,713) discloses container inspection system with systolic array processing
- Chen et al (US 5,535,288) discloses system and method for cross correlation with application to video motion vector estimator.
- Spencer et al (US 5,535,291) discloses superresolution image enhancement for a SIMD array processor.
- Nishigaki et al (US 2001/0028729) discloses object recognition system.

However, none of the above-cited reference, alone or in combination, discloses, teach or suggest first layer processing for object independent processing on a per-frame basis in plurality of parallel processors, with post processing to generate second set of processed data including an N-way symmetric multi-

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processing system and discrete Fourier transform engine and N matrix multiplication engine; wherein N is an integer greater than 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 1-17 are allow and renumber from 1-17.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TSUNG-YIN TSAI whose telephone number is (571)270-1671. The examiner can normally be reached on Monday - Friday 8 am - 5 pm ESP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571)272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tsung-Yin Tsai/

Examiner, Art Unit 2624

April 30, 2009

/Samir A. Ahmed/

Supervisory Patent Examiner, Art Unit 2624